

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001910**Date Inspected:** 26-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Chen Chih Ming**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M, 114M, Orthotropic Box Girders (OBG) and Tower, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Item Description	WBS	Dwg No.	Status
1 Side Panels	NA	NA	Work in Progress.

New OBG Building: Caltrans QA observed ZPMC performing root face weld build up (butter-up) at location identified for excessive root opening. The plate assemblies are identified as subassembly SP018-001 splice weld joining SP026-001 and SP009-001 splice weld joining SP008-001. It appeared that ZPMC has completed the welding portion of the butter-up and is in the process of performing weld prep by grinding the butter-up weld to a smooth uniform surface.

Caltrans QA Inspector observed flux cored arc welding (FCAW), complete joint penetration (CJP) plate splice weld, fill pass weld. The subassembly identified as skin plate SP57B to SP45B. The welder operator is identified as Mr. Gao Dong Liang, welder stamp 048714. The welder is using welding procedure specification WPS-B-T-223 (2) 1T. Caltrans QA measured current welding parameters at approximately 290 amps, 29.5 volts and 200mm/min (millimeters per minute) travel speed. Preheat and interpass temperatures were verified during welding activities. The preheat temperature prior to the start of welding measures more than 69 degrees Celsius but less than 230 degrees Celsius during maximum interpass temperature verification. Caltrans QA observed ZPMC Quality Control (QC/CWI), Mr. Chen Chih Ming monitoring the welding activities at the work-station. The following digital picture illustrates the welding of splice weld, SEG013A-013.

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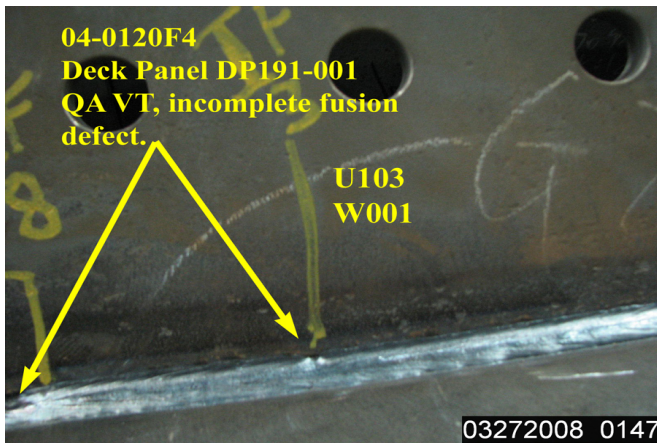
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- 2 Deck Panel NA NA QA VT
- OBG Bay 1: Caltrans QA Inspector performed visual inspection of the completed submerged arc welding (SAW) cover pass welds; partial joint penetration (PJP) welds joining the closed ribs to deck plate panel DP191-001, u-rib U103, welds 1 & 2; u-rib U96, welds 3 & 4; u-rib U97, welds 5 & 6, u-rib U110 welds 7 & 8, u-rib U109 welds 9 & 10. Caltrans QA observed welding overlap, over size welds, underfill and incomplete fusion. These indications observed at the weld were marked in yellow paint stick along the distance from the "Y" axis, starting at the weld start too weld completion end. The weld indications observed were recorded on Caltrans spreadsheet for future reference. The following digital pictures illustrate DP191-001 deck panel and typical incomplete fusion indications.



## Summary of Conversations:

As identified within the contents of this report.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Patrick Lowry, (858) 344-2712, who represents the Office of Structural Materials for your project.

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Inspected By: Hasler, Mike

Quality Assurance Inspector

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**Reviewed By:** Cuellar,Robert

QA Reviewer